This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (twice amended) An electron emission device comprising:

an emitter electrode;

an extractor electrode;

a solid state field controlled emitter comprising a Schottky metal layer formed on the emitter electrode and a semiconductor layer formed on the Schottky metal layer, the Schottky metal layer and the semiconductor layer forming a Schottky metal-semiconductor junction fabricated on the emitter electrode for enhancing electron emission of the emitter electrode and electrically coupled to the extractor electrode such that an electric potential placed between the emitter electrode and the extractor electrode results in field emission of electrons from an exposed surface of the semiconductor layer of the Schottky metal-semiconductor barrier.

2. (original) The electron emission device according to claim 1 further comprising a focusing electrode electrically coupled to the solid-state field controlled emitter.

3. (original) The electron emission device according to claim 1 wherein the solid-state field controlled emitter utilizes Pt as the Schottky metal.

4. (original) The electron emission device according to claim 1 wherein the solid-state field controlled emitter utilizes TiO_2 as the semiconductor.

5. (original) The electron emission device according to claim 1 further comprising a dielectric placed between the emitter electrode and the extracting electrode.

6. (original) The electron emission device according to claim 2 further comprising a second dielectric placed between the extracting electrode and the focusing electrode.

7. (original) The electron emission device according to claim 1 wherein the solid-state field controlled emitter is a flat emitter.

8. (original) The electron emission device according to claim 1 wherein the solid-state field controlled emitter conforms to a tip-based geometry.